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B-79366

8. Mass Fires. The spread of fires in a built-up area such as an urban-industrial center, depends upon a number of extremely important and variable conditions. These are essentially as follows: (a) Weather, (b) Terrain, (c) Closeness and combustibility of buildings, (d) Adequacy and survivability of fire-fighting services, and (e) Available water supply. Fires may originate from secondary causes such as electrical short circuits, broken gas lines, upsetting of stoves, furnances and so on, which are a direct effect of the blast wave. At Hiroshima, for example, the total area severely damaged by fire was roughly four times as great as in Nagasaki. One of the primary reasons for this was that Hiroshima is relatively flat with a high building density, whereas Nagasaki was hilly with a less dense concentration of buildings near ground zero. From the evidence of charred wood found at both Hiroshima and Nagasaki, it is believed that there was no actual ignition of wood from thermal effects. The fires actually originated from secondary causes resulting from blast effects. Contributory factors to the destruction by fire at Hiroshima were (a) Fire-fighting forces were located close to ground zero, (b) Failure of the water supply, and (c) The ensuing "fire storm" at Hiroshima consisted of a wind which blew toward the flat, burning area of the city from all directions, reaching a maximum velocity of 30 to 40 mph about 2 to 3 hours after the explosion. At Nagasaki no fire storm occurred. In this connection, it should be noted that "fire storms" are not a special characteristic of nuclear explosions. They may or may not occur.

9. Nuclear Radiation Effects. Nuclear radiations, prompt and residual, can cause injury to exposed personnel or damage to radiation-sensitive equipment such as transistors and other electronic components. [

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